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The Management REVIEW



APRIL, 1943

COMMENT • DIGEST • REVIEW

PRODUCTION **AMA** CONFERENCE

MEN • MATERIALS • METHODS

The "growing pain" war problems of conversion and making unfamiliar products have been largely mastered by production executives. Today's great problems are those of materials procurement and manpower utilization — and their adjustment to production scheduling. Production executives are solving these new problems too. They'll tell about the progress they're making at this timely, vital conference. **MAY 5 and 6, 1944**

HOTEL STATLER • CLEVELAND

AMERICAN MANAGEMENT ASSOCIATION

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THE MANAGEMENT INDEX

General Management

Our Overworked Executives

A WAR production problem as serious as absenteeism looms in the acute shortage of executive and supervisory employees and the increasing number of nervous or physical crackups of these essential people. The problem boils down to two simple things: War production can't be run from wheel-chairs in the nation's leading sanitarians; and executive errors attributable to frazzled nerves or physical exhaustion can sabotage the war effort more than strikes or workers' absences.

Here's a picture of the average Mr. Boss of today:

Hours: The sky's the limit—and no overtime pay.

Wages: In highest brackets, cut by higher taxes and governmental order to a point insufficient in many instances to meet long-established obligations; in lower brackets, frozen except for increases specifically permitted by the regulations.

Working conditions: Offices probably unchanged physically, possibly

better in new plants—but crowded, with short-handed and less efficient staffs, minimum office equipment.

Feeding: Restaurant and cafeteria facilities for executives and white-collar workers are generally better than those provided for production workers, but the higher-ups either don't use them or use them only to continue conferences. Lunch over the desk is common.

Vacations: Gone with the war.

Recreation: Long hours have eliminated most recreation; other normal types have been curtailed or eliminated by gas rationing and loss of long weekends and vacations.

Transportation: Gas rationing has converted many suburbanites who formerly drove to work to commuters dashing for the streetcar or the 8:02 (or earlier) and perhaps standing all the way to town.

On top of all this, the nature of the work for most men up from the ranks in industry has materially changed under the impact of the war.

For publishers' addresses or information regarding articles or books, apply to AMA headquarters.

Pointing to the lack of any up-to-date scientific study of the problem (a lack which again is indicative of management's utter unconcern with management's own health), Dr. Victor G. Heiser declares:

It has been my personal observation that all too many of our plant executives are neglecting their health from many points of view.

Often they provide proper food for their employees at company cafeterias and on rolling kitchens and between-meal snack bars while giving practically no thought to the health and nutritional values of the "fuel" they themselves use. They see to it that healthful working conditions, recreational facilities, and morale-building programs are made available to workers, but neglect their own mental health by working themselves to the bone and taking no time out for recreation and re-creating their nervous energy.

The following suggestions are based on the best experience of companies surveyed by *Modern Industry*. Some are simple, commonsense health rules that, except for the fact that they are so wantonly violated by men of management, would seem unworthy of mention. Others concern company policy and company action. For individual or collective management action, they include:

1. *Reduce the work load.* Are you hogging the work, carrying too much detail? Or are some of your associates assuming all the burdens?

The executive who wants to handle all the reins, particularly in the present hectic situation, is heading for disaster. This desire is particularly strong in the production man who almost overnight finds himself running a plant with thousands of workers instead of a shop with a few score. He

wants to have a finger on every pulse in the plant—and a finger in every pie.

But such attention to over-all detail in present-day plant operations—and the principle can be carried on down the line through management—does more than place too great a burden upon the guilty executive. It stifles the development of initiative and executive ability in subordinates.

Today, emphasis should be placed more and more on the development of management ability down the line, on division of authority, on clear definition of lesser jobs, on placing responsibility on staff assistants.

2. *Promote juniors.* A corollary of division of authority is the promotion of men down the line to positions of greater authority and responsibility. This is also an answer to the problem of young executives leaving for higher salaries with other companies. Under wage stabilization, increased responsibilities warrant increased salaries. They also heighten the chances of draft deferment for those given them and enhance the morale and loyalty both of those promoted and those with prospects of promotion.

3. *Use women.* Many companies are finding that the secretary to an important executive can readily become an executive assistant handling much of the detail work normally handled by her employer. In many instances, secretaries have become the *alter ego* of their boss, can in a pinch discharge every responsibility. And universities and colleges are today turning out women engineers, chemists

and administrators well qualified to take the places, as junior executives, of the men who are going into the Army.

4. *Reduce hours of work.* They can be cut down—without the use of a time-clock! A few days of time study by the average executive or his secretary will reveal many wasted hours—hours that could be saved by cutting conferences to the essentials, turning correspondence over to a secretary, referring phone calls to subordinates.

5. *Eat proper meals properly.* The rules of proper, nutritious eating are readily available to all management men. Regular meal hours and regular diets should be observed by executives. And meals should not be mere extensions of business conferences.

6. *Take vacations.* In peacetime it was a generally accepted management practice to give vacations to all executive and administrative employees. The rule was: the greater the responsibility, the longer the vacation. Vacations, complete and extended, are more essential now than in peacetime; but if they can't be granted, many companies find that a change of scene will suffice. Some companies manufacture

spurious "inspection trips" for overtired officials who just won't take time off.

7. *Take regular physical examinations.* Periodic physical examinations of executives are essential, perhaps far more so than those of production workers. The checkup alone, however, does not do the job. There must be assurance that the executive employee gets diagnostic service and *acts upon the diagnosis*. The finest diagnostic service in the world is of no avail if the executive files the plant physician's memorandum in his back pocket and drops dead at a banquet three months later!

8. *Get enough recreation.* Recreation for executives can well be tied in closely with the periodic physical checkup. Certainly for older men, physicians can recommend a physical fitness program which will entail the right amount of the right kind of exercise. For both young and old, scores of gymnasiums and health clubs have developed worthwhile programs of recreation requiring only a few hours each week.

Modern Industry, March 15, 1943, p. 44:5.

Profits and Public Opinion

SEVENTY per cent of the American people believe that extravagant profits are being made out of the national emergency—that war profiteering is prevalent. A full third believe that increases in profits represent the major reason for increases in the cost of living, as against only 18 per cent who attribute them to increases in taxes. These and similar findings of recent public opinion surveys make it obvious that companies engaged in war work should expand and sharpen their techniques of telling their profits story.

Recommended techniques for telling the story of corporate profits include showing profits in percentages instead of in lump sums—showing profit percentage after taxes—giving reasons for profit increases—ratio of cost of management to total income—explaining the need for reserves to cover postwar conversion or expansion—etc.

—*Sales Management* 1/1/43

The Census as an Aid to Business Men

HOW many dwelling units are there in Des Moines, how many are occupied, and, of those occupied, how many have no bathtubs?

How many drug stores with soda fountains are there in Peoria, and what is their annual volume of sales?

How many families in Duquesne enjoy a wage or salary income of more than \$5,000 a year?

How many horses, mules, cows, swine and chickens are there on farms in Johnson County, Iowa?

How many commercial laundries are there in the State of Pennsylvania?

Suppose you started out on foot to get the answer to each of these questions. You would be several years older before you finished the job. You would, much rather, pay three cents to obtain the information, wouldn't you? But, you ask, where can I get this information for this price?

The answer to that last question is the easiest one of all: simply write to the Bureau of Census, Washington, D. C. As the nation's No. 1 fact-finder, the Census Bureau has accumulated, and continually adds to its statistical storehouse, an almost incredible volume of facts about the United States, its citizens, its natural resources, its economic progress, the scope of its retail and wholesale trades and of its manufacturing industries, etc. Never in its 150 years of operation has the Census Bureau been better prepared to give service to the business research

worker, the market analyst, the sales planner, the industrial executive, and all other interested parties.

No sensible business man will undertake a marketing program without first making a study of the potentialities in the geographical area he plans to serve, seeking a measure of the market and of the competition he faces.

He has, to begin with, the facts and figures from his own records on the ability of his organization to produce the goods he has to sell, what it costs him to operate, what he can do to give service, and so on. Next he undertakes to measure and evaluate his market and establish a gauge for expansion or re-orientation of his business. Part of this, of course, may require some original field investigation. But before taking the costly step of surveying the field himself, he should first assemble already available information—all material which has a bearing in a basic analysis of his situation.

Such material is the information procurable in recorded form from various sources. Some of it can be obtained from chambers of commerce or trade boards in his area. Not the least important sources are state and local government bureaus, and the agencies of the Federal Government—notably the Census Bureau.

Of course, the Census Bureau cannot supply all the answers to all the questions that a business man might ask. The Bureau can't tell you how

many people in any given area wore straw hats in 1935, nor does it have any data on the number of ice skaters in Ames, Iowa; but it does conduct:

1. *A Census of Population*, which provides information on the number of people in practically any civil subdivision of the country, the number in each age group, their degree of education, how many are employed and how many seeking work, the number and size of families, and the economic groups in which they fall, and many other facts of economic and sociologic importance.

2. *A Census of Housing*, taken the first time in 1940, which provides data by civil areas—i.e., nation, states, counties, cities, towns, villages, commissioners' districts, beats, wards, townships, and so on—on the number of occupied (34,772,673) and unoccupied (2,438,790) dwelling units. It also provides data on the ownership status, amount and type of mortgage, rental value or rent paid, radios, age and state of repair of the structure, types of sanitation and utilities, kind of fuel used for heating and for cooking, and a dozen other valuable items of information.

3. *A Census of Business*, which measures the volume of business and number (1,770,904 stores) of establishments of different kinds and types in wholesaling, servicing and retailing. Its reports tell you how many grocery stores with meat markets there are in a given area; how many furniture stores there are in a specific location—together with the amount of their business, number of employees and payroll.

4. *A Census of Manufactures*, taken every two years, which measures the activities of more than 400 different industries combining the operations of over 184,000 manufacturing establishments, their volume of operations in terms of value of products, cost of materials, expenditures for electric power, number of employees, wages paid, etc.—listed by kinds of manufactures down to the smallest town, where it is possible to do so without revealing confidential data on individual establishments.

5. *A Census of Agriculture*, which provides, by counties, data on number of farms, owner-operators, tenants, amount of acreage harvested, principal crops grown and amount of harvest, value of buildings and land, year of latest model car, truck and tractor whether served by electricity and telephone, etc.

6. *A Census of Mineral Industries*, which provides data on the nation's natural resources.

All these data are issued in published form, and the volumes containing them are placed in hundreds of U. S. depository libraries throughout the country, where they may be consulted. The 1940 Census reports are already rolling off the presses, and copies of such reports on many subjects are available to business men who request them from the Census Bureau. Here a word of caution: Requests should be specific, defining as exactly as possible the subject you are interested in and stating the particular area, by counties or towns, on which data are wanted.

In addition to all this, the Bureau makes special tabulations, at cost, from its records for business associations, individual firms, research groups, etc., when the particular data need to be re-

arranged into groupings not regularly made by the Bureau. By VIRGIL D. REED, Assistant Director, Bureau of the Census. *Journal of Business* (University of Iowa), March, 1942, p. 10:2.

Industry Sponsors "Victory Gardens"

BUSINESS leaders who have studied the nation's serious food problem are firmly convinced it can be solved only by industry's cooperation. Pointing out that much of America's foodstuffs this year must be raised in home gardens and by persons who lack experience, they are of the opinion that waste of time and money can best be avoided through industrial sponsorship of "Victory Gardens" for workers.

Successful garden projects sponsored by industrial plants for employees are numerous. Among the plans which might be considered by other industrialists are the depression-born garden project of International Harvester Company and the program of Goodyear Tire & Rubber Company, Akron, O.

The latter plan, typical of those operated by several companies, can be modified to fit particular local conditions. In a nutshell, it embraces: selection of a committee representing workers and management to sponsor the campaign; selection of garden sites and preparation of acreage by the company for planting; distribution of application blanks among employees desiring to participate in the project; an educational campaign on planting, cultivation, etc.; and the maintenance of close contacts with farm extension services and other agencies that can assist the employees. Goodyear workers buy their own seed and furnish their own garden tools.

Upward of 9,500 International Harvester employees participated in the company's garden program during the depression year 1932. Now redesigned and streamlined, the program of this Chicago farm equipment manufacturer is being conducted under the wartime slogan of "1 Farm Family + 1 Town Family = Plenty to Eat." It calls for farmers to let city residents cultivate gardens on part of their land and share in the harvest. Under this plan, the farmer provides seed and tools and directs the work of the city resident.

Information on garden plans may be obtained from the National Victory Garden Institute, 598 Madison Avenue, New York City.

—NAM News 2/27/43

Downtrend in Strikes

FOR every 10,000 man-days worked in war industries in 1942 only six man-days were lost by strikes, according to the Office of War Information. Of a total 3,339,000,000 man-days worked during the year, 2,095,294 days were lost in strikes. There were 1,363 strikes in war industries in progress during 1942, involving 569,801 men.

Man-days of idleness due to strikes during the first year of war were one-fourth the average for the preceding five years of peace. The monthly average for the 1937-1941 period was 1,418,896 man-days lost in all industry, compared to an average in 1942 of 380,417 days lost per month in all industry and 174,608 days lost per month in war industry.

The Decline in Labor Productivity

EVIDENCE multiplies that the productivity of labor is now declining at an alarming rate. The Department of Labor reports that man-hours worked in manufacturing industry increased by 26 per cent between November, 1941, and the same month of 1942, while the index of manufacturing production computed by the Federal Reserve Board rose by only 17 per cent during this period.

The high level of production made necessary by the war at first resulted in greater productivity per man-hour, as a consequence of shifting many plants working part time to capacity operations. However, beyond a certain point wartime influences began to undermine labor productivity. The new and untrained workers who were being hired in great numbers were not so efficient as the experienced workers they replaced or supplemented. Shortages of equipment and materials, and the need for utilizing less efficient machinery in many instances to fill extraordinary demands, also affected productivity adversely. Increased turnover and

absenteeism undermine labor efficiency. More recently, shifts in war production schedules, such as the emphasis on planes and ships instead of tanks and ordnance, have lowered output per man-hour in plants affected. Changes in both products and specifications are likely to become more common as the course of the war modifies the volume of types and weapons required.

The decline in labor productivity is one of the most serious aspects of the war manpower problem. Increases in the number of workers employed in war industries and estimates of the number of additional employees that will be required lose much of their significance if the average output per worker declines by 10 per cent, as was the case during the year ended November, 1942. The manpower problem thus becomes not only one of finding more men and women for war jobs but also of raising anew output per man-hour by close co-operation between government, management and labor. *The Journal of Commerce*, February 4, 1943, p. 6:1.

Double Duty for Women

A "SHARE-YOUR-JOB" program for housewives, suggested by Hugh P. Flynn, president of the Linen Supply Association of America, is designed to relieve the manpower shortage. The plan has two alternatives: (1) Women neighbors would work half-shifts, relieving each other on the job and at home; (2) they could work every other day, doing household duties for both families on the alternate day.

—*Forbes* 1/1/43

► A LARGE California aircraft company employing 200 seriously handicapped workers has found them so satisfactory that it is planning an extensive campaign aimed solely at enlisting more handicapped individuals.

—*Vocational Trends* 1/43

Office Management

Making an Office Record Survey

ANY office activity unchecked by a periodic review is likely to gather avoidupois, and record forms are no exception. A record forms review, therefore, offers possibilities of immediate and important savings to any office.

It is not difficult to assemble a check list of the physical characteristics of forms, showing quantities, combination runs and gang printing; form size in relation to standard equipment; cut in relation to standard sheets; color, weight and content of paper; standards of durability; paper stock for hand and machine posting; processes of reproduction; ruling, tabbing, padding and binding. Nor is there any mystery in design that common sense and a capacity for analysis will not clarify.

Nothing should be taken for granted; everything should be questioned before it is accepted as fact. For instance:

1. *Is the form essential?* Perhaps much of the required information appears on other forms. The elimination of one form, or even of one copy of a form, reduces the number of office operations.

2. *What is its relation to other forms?* The assembly and analysis of all the forms in a functional group may bring startling disclosures. Frequently, duplications and overlapping of text, purpose or use are found, for

it is often the case that different forms have been introduced by different persons at different times and have never been scrutinized together before. In making this analysis, a listing of the data on similar forms will often prove helpful, or pegboard strips may be assembled in different alignments to present different spread sheets of data.

3. *What is its relation to the function?* What does a form do, and how efficiently is it arranged to perform its function? In a reference form, the index margin should contain all the information which should be observed first. Grouping of the text and sequence of the captions have an important bearing on the speed and accuracy with which the form can be handled. Sometimes a copy can be eliminated or an extra copy prepared to obviate need for another form. If colors are used in a multiple form, a standard rotation will assist in routing. Then, too, an adequate guiding arrangement and convenient housing are important.

4. *What is its relation to the employees?* Forms should be studied at the point of use. The supervisor alone does not necessarily know the whole story; the intelligent employee who has had long experience with a form will have something to contribute to the study.

5. *What does experience show?* For half a century and more the office has been experimenting with forms

and records. No matter what you are trying to accomplish with your forms, the chances are overwhelming that it has been done before. Trade magazines, sales representatives, and office management literature will help. For example: If speed, hand-posting, and signal control are important, visible appliances are available; a volume of posting and figuring suggests a machine; much assembling and disassembling, the possibility of snap-out and continuous forms.

After the record forms survey is completed, care should be taken to prevent duplication in the future. Some provision should be made for review of all new and revised forms at a cen-

tral point; the office manager who has just completed a survey is in a position to recommend such a procedure to top management. In any case, administrative backing is important to the success of the program, for unless the point of review is to become a bottleneck, forms must be studied at the rough-draft stage.

It seems obvious that in the future management will take greater interest in the detail of its offices. In consolidating its gains and expansion, it is going to find waste-control essential. BY CHARLES O. LIBBEY. *Proceedings of the Twenty-third Annual Conference of the National Office Management Association*, p. 47:5.

Clerical Salaries in New York City

WHITE-COLLAR salaries are definitely on the upgrade, a survey made by the Industrial Bureau of the Commerce and Industry Association of New York reveals.* Further, since the Bureau's survey deals only with New York City, one of the few spots in the country where manpower is plentiful, it may well be that the figures do not reflect the full extent of the rise in other sections of the country, particularly in war-industry areas.

In December, 1942, the Bureau surveyed salaries in 281 firms, including banks and trust companies, investment banking and brokerage houses, insurance companies, transportation companies, public utilities, wholesale and retail firms, manufacturing concerns, importers and exporters, hotels, publishers, advertising agencies, and printing companies. The weighted average salary level of the largest groups of workers in all categories was \$33.37 for males, \$27.32 for females, compared with levels of \$29.63 for males and \$25.29 for females reported in the Bureau's 1941 survey.

Salaries of stenographers (female), for instance, ranged from \$15 to \$58, with the weighted average salary level of the largest group at \$30.21. For the previous year the range was from \$13.85 to \$57, with the weighted average at \$27.72. In 1941 the weighted average for male typists was \$24.61, and for females, \$22.36; in 1942, the figure was \$25.62 for males, \$23.47 for females. Salaries of bookkeepers, machine operators, dictaphone operators, telephone operators and clerks have risen also, in varying amounts. Of the 281 firms reporting, incidentally, 171 stated that they were experiencing difficulty in securing clerical personnel.

* *Survey of Weekly Clerical Salaries in New York City*, Industrial Bureau, Commerce and Industry Association of New York, Inc., New York City, 1943. 16 pages. 50 cents.

► ONE OFFICE supplies its stenographers with tiny American flags. When a stenographer finishes a typing job, she sticks a flag in her typewriter to indicate it's temporarily free for other stenographers to use.

—*Modern Industry* 1/15/43

Personnel

Equal Pay for the Woman Worker

A CHIEF problem resulting from the wartime employment of thousands of women new to the labor market is what shall be put in their weekly pay envelopes. This problem is not experienced equally by all employers but is particularly pressing in industries which for years have had large numbers of women workers and have observed the time-fortified practice of paying them a differential wage. Its solution promises to have repercussions extending far beyond the resumption of a peacetime economy.

In the period during which women have been replacing men (either filling the same jobs or ones which have been modified), guides to rates of pay have been provided by a series of decisions of the National War Labor Board. This agency continues to be the most important single influence in determining the current wage policy for women workers.

One of the first significant rulings of the Board on the subject of compensation for women workers was in the case of the Norma-Hoffman Bearings Corporation, Stamford, Connecticut, last August. The Board said in part:

When women take the places of men and fully perform all of the tasks previously performed by men, they shall be paid the same wages as the men thus replaced. Where, however, the assistance of men is necessary, as in the handling of heavy materials or the setting up of machines, a recognized differential based

upon proper time studies shall be established. If the union deems the differential to be improper, the grievance shall be disposed of under the grievance procedure.

During the next month the Board ordered the Brown & Sharpe Manufacturing Co., of Providence, to pay equal wages to women who "in comparable jobs produce work of the same quantity and quality as that performed by men."

It will be noted that the phraseology in the Brown & Sharpe case did not include specifically the word or idea of *replacement*. The job which the woman was filling need not have once been occupied by a man. If she was doing work of a nature comparable to that done by men and was producing the same quality and quantity of output, she was to receive the same wage as a man.

Dr. George W. Taylor, vice chairman of the Board, who wrote the opinion, pointed out that when only male workers were employed, tasks were often divided in the interest of efficiency, to reduce unit costs while maintaining hourly rates, and that when the "extra labor" for heavy work did not increase unit costs of production, this should not be used as a reason for cutting the women's rates.

Where changes have been necessary as a result of replacement of men by women, these have been, thus far, chiefly of two types—reduction of the

weight-moving and handling features of the job, and removal of responsibility for setup.

One plan which makes it possible to use women on heavier work has been to assign a man to a group of women. Or adjustments have been made for weight-handling without the use of additional workers. In the warehouse of an electrical products company, for example, markers used to pull out the stock and mark it, after which their work was checked by a checker. Under the new arrangement, a girl and a man work as a pair. The man pulls out the stock; the girl puts on the labels and reads them against the order, thus providing the check. The work of the girl and man in this way equals the work formerly done by two men.

Where cranes are used, women are frequently permitted to use them for weights lighter than those which men were accustomed to handle without assistance. Frequently male tote-box handlers are provided. In job machine shops the lighter work is routed to women operators.

A breakdown of work into component parts has often made it possible to assign women quickly to jobs for which male workers had received comparatively long periods of training. Thus, in an electrical products company where five men formerly worked as a unit, each doing a complete job involving several operations, five women are now working as a line assembly, each engaged in a single process which she learned in a three weeks' pre-employment training course at vo-

cational school. No extra workers are needed under the new organization, nor has the cost of production been increased.

The War Labor Board in other decisions has stated that management and the unions must agree between themselves on the comparability of quantity and quality of women's work as a basis for applying equal pay scales. In a case involving the Joshua Hendy Iron Works, of San Francisco, and the International Association of Machinists (A. F. of L.)—in which the Board decided that an existing union wage agreement was no bar to determination of a newly risen issue of pay scales for women war workers—the Board, reiterating its doctrine of equal-pay-for-equal-work, left the actual working out of details of the pay problem to management and the union. If the parties were unable to agree within three weeks, the issue was to go to arbitration.

Included in another recent decision were specific provisions for hiring rates and progression to the base rates. With specified exceptions, entrance rates were to be no less than 10 cents below the rate for the job classification, pay increasing automatically by five cents in 30 days and to the standard job rate within 90 days, or as soon as average requirements of the job were met, whichever occurred first, deviations from the rule to be negotiated locally for jobs requiring a longer period of training.

However, with respect to entrance rates, considerable variation in practice exists. A lower beginning or learner's

rate for women, with slower progression to the base rate, is held by some as not inconsistent with adherence to the principle of equal pay for equal work. Because of women's comparative inexperience with tools and machinery, some managements are of the opinion that it takes a woman without previous training longer to become proficient than an untrained man.

Even among the more recently organized industries, this type of differential is found. In one of the new aircraft plants, women are paid a starting rate of 55 cents an hour and receive five-cent increases at four-week intervals until, at the end of 16 weeks, they are receiving 75 cents, the base rate for the job lowest on the wage scale. Men are paid 60 cents an hour starting rate, reaching the same base rate in 12 weeks.

The determination of relative productivity of men and women workers on the same job is often difficult. In some cases, under agreements between company and union, temporary rates for women workers have been established until opportunity has been afforded to accumulate data based on actual operation experience.

Some of the companies which were paying women a differential wage before the war have perceived a need for re-examination of their entire rate schedule. Thus, a New England industrial plant which had long had a 17 per cent differential (paying women 17 per cent less for the same jobs as men performed under less favorable working conditions) completed a re-evaluation of all its operations about four months ago. In doing so, the two former separate wage curves for men and women were reduced to a single graph.

A general order of the WLB, issued last November, encouraged employers to resume many re-evaluation programs which temporarily had been halted. This order provides that, where women are performing work similar in quality and quantity to that performed by men, wage adjustments may be made by employers to equalize women's and men's pay without prior approval by the War Labor Board, *provided such adjustments have no adverse effect on price ceilings. The Conference Board Management Record*, January, 1943, p. 1:6.

Health and Work

A DEQUATE plant medical programs, concludes a study made by NAM's Dr. Victor G. Heiser, reduce:

Accident frequency by 45%.
Absenteeism by 30%.
Occupational diseases by 63%.
Labor turnover by 27%.
Industrial compensation insurance by 29%.

—*Modern Industry* 1/15/43

Restaurant Facilities for Industrial Workers

OPERATING an industrial restaurant on "standard time"—serving lunch in the middle of the day to thousands of peacetime workers—is a big-time catering job. But when wartime brings crowded restaurant conditions, sugar shortages, meat crises, priorities, rapid turnover, along with the usual headaches peculiar to the business, then feeding multitudes of workers becomes a miracle of planning, buying and managing.

With all these problems the Western Electric Company has had experience in its works at Kearny, N. J. In addition to its dining rooms, this city within a city maintains among other things its own power and light plant, fire department, newspapers, club, hospital, recreation centers, athletic fields, evening schools and bus terminals. The original restaurant, a modern cafeteria covering more than 20,000 square feet, was established 15 years ago when this plant for the manufacture of telephone equipment was constructed. Today, two main cafeterias, a service dining room, and several lunch counters conveniently located in various buildings serve some 3,500,000 lunches a year in the periods from 9:30 a.m. to 4:00 o'clock the following morning.

To satisfy this collective appetite, the dining rooms use in one year 228 tons of potatoes, 348,000 pounds of fresh meat, 1,226,000 portions of ice cream, 48,000 gallons of soup, 242,000 rolls, and 78,000 three-pound loaves of bread.

Before the sugar shortage, some 13,000

pounds of the precious commodity were used each month. Add to this 1,000,000 sandwiches, 1,748,000 pints of milk, 38 tons of fruits and vegetables, and some 46,000 pounds of butter—and it is possible to visualize the magnitude of the task of feeding such an industrial army!

Years ago, when company-owned restaurants were just coming into favor, Western Electric established a policy which has been maintained through good times and bad. Its features are:

1. Good, wholesome food
2. Reasonable prices
3. Suitable surroundings.

Perhaps the two prime factors in operating a successful industrial restaurant are: (1) an adequate and well-trained staff, and (2) the buying: knowing how, when, where, why and what to buy.

As to the business of buying, a Western Electric restaurant purchases not only high quality food, but food that is best adapted to its workers. In this connection, a nutrition training campaign has been going on for several years without a word about it! The plant's dietitian does not tell the workers what they should eat, or why; as a practical psychologist, she simply plans attractive dishes containing the proper body-building vitamins and calories, and eliminates some of the less nutritious. The result is that the employees become nutrition-minded without knowing it.

The responsibility of the buyer is a

heavy one. During these days he must keep in close and constant touch with his markets. He must be on the job when the meat trains come in if he is to have any assurance of obtaining supplies to feed the soldiers on the production line. He will try to negotiate for, say, three months' supply of staples in a year of low activity, and for six or nine months' supply in a year of high activity when prices are likely to go up. This means scientific planning, economic buying.

A large stockroom for non-perishables is essential to the efficient functioning of a restaurant of this size, and three refrigerated rooms take care of the meats, dairy products, and vegetables and fruits at the Western Electric plant.

Catering to one of the biggest appetites in industrial history falls upon the shoulders of Western Electric's only woman department chief. She heads a staff of some 195 skilled and unskilled workers, 115 of whom are women. Besides a trained dietician, there are supervisors, cooks, bakers, a butcher, a hostess, waitresses, and numerous restaurant hands. Sixty of these are part-time workers. The part-time workers, incidentally, are put on the restaurant payroll, retained under restaurant supervision, and loaned out to the shop whenever they can be spared from their restaurant duties.

As in other industries, all food handlers undergo a careful physical examination once a month. In addition, the company's medical department gives X-rays and blood tests periodically. Also, special precautions are

taken to minimize the personal handling of food; and such mechanical aids as food choppers, slicers and whippers are numerous. The chemical laboratory makes frequent tests of bacteria counts on cups, glasses and spoons in order to determine the sterility of utensils used.

To educate the restaurant employee properly requires strict adherence to a day-by-day training program. Circulating around the restaurant each day is a supervisor whose job it is to observe conditions and to correct those that may affect efficient operation. A tactful lesson in "how it should be done" is given on the spot. Twice a week this supervisor talks with food handlers before they go on the job. These discussions cover everything from portion control and proper behavior toward customers, to good grooming.

The question of what the employees eat during these days of high-geared industrial activity is an interesting one. A world-famous nutritionist has stated that many disabilities which cause serious loss of man-hours have a basis in malnutrition.

When the Kearny Works engaged a trained dietician several years ago, it was with this prime thought in mind: to provide workers with those foods which were known to be body-builders. It was found that such foods tended to lessen absenteeism, to decrease illness, to reduce turnover, and to increase productivity. The results have become evident in a noticeable tendency toward choosing such vitamin-rich items as

raw vegetable salads, cheese dishes, acid fruits and milk.

Five kinds of service on an around-the-clock basis in this teeming little city within a city are provided to appease the appetite of more than 53 per cent of its people—a high percentage, considering the crowded condition of today's industrial cafeterias. These services are:

1. The speed line, where a complete, well-balanced hot meal may be procured quickly.
2. The *a la carte* line, where a wide variety of dishes, hot and cold, from a bowl of soup at 6 cents to a complete luncheon at 50 cents, can be bought, as well as salads, desserts, sandwiches, attractively displayed, and, of course, hot and cold beverages.
3. A dining-room service, with a service

charge of 10 cents, where the same food as that served in the cafeteria is available.

4. Lunch counters at convenient locations in buildings too far from the main cafeterias.
5. A special diet line.

Perhaps unique in industrial annals is the special service available through the diet line. This means much to the employee who, upon examination, is found to be suffering from some such chronic gastronomic disturbance as colitis. As part of the treatment, the plant doctor prescribes a special diet to counteract the condition, and the diet line permits the worker to follow faithfully the food prescription given him. By T. M. ERICKSON, *Executives Service Bulletin*, September, 1942, p. 5:2.

To Smoke or Not to Smoke

WHEN an Army Ordnance officer forbade smoking in a certain plant employing more than 5,000 workers, a strike almost ensued. Smoking had always been permitted in this plant, except in certain obviously hazardous areas. In another plant about 800 men went home, refused to work until union officials sent them back to their jobs. In many other plants there was considerable grumbling and complaining when the "No Smoking" signs went up.

Whether to permit men to smoke at work has always been a ticklish question, and now, with Army and Navy Ordnance officers taking a hand in the controversy, it becomes more difficult.

Some plant managers and personnel

men have made great efforts to be fair. Almost every known plan has been tried, such as smoking periods, smoking areas, full permission to smoke, and full prohibition of smoking. In many plants where there is no especial fire hazard, smoking on the premises means dismissal. In other plants, smoking within reason is permitted. The insurance companies have established rules about smoking, and are almost certain to forbid smoking in plants where there are wooden or oil-soaked floors or other hazards.

H. L. Nunn, president, Nunn-Bush Shoe Company, famed Milwaukee "52 pay checks a year" company, reports:

"Ever since this plant was built 27 years ago, there has been a rule against

smoking in the factory proper, including washrooms; and during all those years I have never seen any indication that the rule was violated. I have always attributed this to the fact that in our factory the workers participate in making the rules. Now, since the war, our workers have organized a defense council and have barred smoking throughout the entire building, including the offices and sample rooms—in fact, every single spot within the four walls except the dining room."

Another widely known Milwaukee organization, Allis-Chalmers Manufacturing Co., has made different approaches to the smoking riddle. Lee H. Hill, vice president, reports:

"The smoking privilege at Allis-Chalmers has gone through a development extending over a period of years. The company for many years permitted smoking on the night shift and on overtime working hours on the first shift. Workers on such shifts were permitted to smoke principally as an added inducement to working the less desirable hours.

"In June of this year, upon the request of both the shop management and the union, the smoking rule was further liberalized to permit smoking on any shift. The groundwork for this liberalization was laid by carefully surveying the plant to establish restricted areas, and talking over the matter of possible abuse with the bargaining committee of the exclusive bargaining agent for our employees. A notice was posted to the effect that smoking would be permitted on any shift, except where 'No Smoking' area was specifically desig-

nated, and except on jobs where specific instructions to the contrary were issued by the foreman."

One would expect that smoking in an arms and ammunition plant would be severely restricted, but at the great plants of Winchester Repeating Arms Company, now busy making bad news for Hitler, there has been an attempt to permit smoking wherever possible. A. F. Snyder, personnel superintendent, says:

"It is against the rules of this plant to smoke during working hours. We have, however, set aside 10 minutes in each working shift in which we allow employees to smoke. A whistle is blown to notify the employees that the smoking period has started. They gather in one, two or three groups, according to the number of employees in the department. Each group has a large pail half full of water. The employees stand around the pail and throw matches and butts into the pail. When the period is over, everyone stops smoking and the pail is removed.

"Of course, in the shops where we handle fulminate or powder, we do not allow smoking at any time. We have made arrangements for the employees of these departments to go into other departments during smoking periods."

In a great steel plant the hazards are obviously not so great, and for that reason Inland Steel Company employees are permitted considerable latitude in smoking. This company's regulations are described by M. M. McClure, superintendent of industrial relations:

"In general, we permit smoking in

the plant. However, there are certain departments where smoking has been prohibited, and the employees obey the regulations very agreeably."

Another company struggling to let men smoke as much as possible is Northern Pump Company, Minneapolis. According to E. B. Hansen, personnel director, Northern Pump's policies are as follows:

"We have smoking periods of 15 minutes each in the forenoon and afternoon and also during the half-hour lunch period. There are no restrictions on smoking as far as the night crew is concerned. We do not allow smoking in the washrooms at any time.

"These smoking rules have been in effect since the fall of 1940, and we have never had any trouble with respect to this problem."

In the nation's large aircraft plants every precaution must naturally be taken, and D. W. Siemon, personnel director, Glenn L. Martin Company, summarizes in one brief sentence the company's smoking regulations:

"Company rules prohibit smoking on the grounds or in the factory buildings, except outside of working hours, and then only in areas specifically designated."

American Business, November, 1942, p. 13:3.

Standardized Meals for War Workers

THE War Production Board is mulling over a plan to apply assembly-line, mass-production methods to restaurant food service in arms plants and government agencies.

The idea is to save time and labor by the pre-assembly of standardized meals. On the basis of restaurant operators' experience, nine out of 10 customers are willing to accept someone else's judgment on what they should eat. Special provision would be made for the minority of rugged individualists.

The plan is looked on favorably, but still must pass through a good deal of final clearance procedure. Meanwhile, restaurant engineers are preparing to give the system its first trial by installing it in the dining room of a large university in Washington.

The menus would offer diners a limited selection, probably not more than two combinations. These would be assembled in the kitchen by a corps of trained ladlers, rushed along tray slides, through holes in the wall, to the waiting customers as they pass the cashier.

In these mass-production cafeterias, customers no longer would have long waits on line with their trays while slow movers ahead picked over food and diet cranks wrangled about their dislikes with the help behind the counter.

The streamlined method, its backers say, will move diners along at a rate of 20 to 30 a minute, which is four to six times faster than the present average. It also will require only a fraction of the customary service counter help, and will call for few critical materials. The plan is designed primarily for use in the large restaurants and cafeterias of war agencies and industrial plants.

—*The Wall Street Journal* 3/29/43

► INSTEAD of a house organ, one company uses a large bulletin board displaying photos of employees at work and at play. Brief captions explain the photos and identify the workers. The contents of the board are changed periodically. This device has proved extremely popular and has eliminated the time and expense required for the usual type of employee publication.

—*The Hiring Line* 1/43

Tests for the Selection of Inspector-Packers

ONE of the commonest jobs encountered in industry is that of inspector-packer. Typically the work consists of the examination of manufactured or prepared items, the elimination of imperfect ones, checking the contents of the lot under consideration with its accompanying specifications, and packing or wrapping them. The work is not necessarily done in this sequence, but essentially involves the three operations of inspecting, checking and packing.

The inspector-packers considered in the present report are girls employed by a pharmaceutical manufacturing company in what is called the finishing department. These girls are called upon to handle job lots of vaccines and similar biologicals which have been prepared according to the particular specifications of the company's clients. The materials, which are in fluid, paste or powder form, are put up in small bottles, vials or capsules, which are then stoppered, examined for the presence of extraneous material, labeled according to specifications, and finally cartoned and packaged.

The company had been selecting new employees by the interview method, but was experiencing a high degree of labor turnover in the finishing department. It was therefore decided to try out several of the most promising aptitude tests and ascertain which ones could be used best to predict success in the inspecting-packing work of the finishing department.

A combination of the ratings of the supervisor and forelady was used as the criterion of job proficiency of 26 girls who were studied. Several tests were administered to this group of employees, and the following validity coefficients were obtained: Minnesota Paper Form Board, .57; peg board, —.50; Minnesota Rate of Manipulation—Turning, —.40; Minnesota Rate of Manipulation—Placing, —.24; Minnesota Vocational Test for Clerical Workers—Number Comparison, .29; Minnesota Vocational Test for Clerical Workers—Name Comparison, —.26; and the MacQuarrie Test for Mechanical Ability, .19.

The investigators concluded that measures of the ability to perceive spatial relations, such as are given by the Minnesota Paper Form Board test, will be extremely valuable in the prediction of success of inspector-packers of the sort considered in this study. Measures of manual dexterity also will have considerable value. The Minnesota clerical test will have somewhat less value, and the MacQuarrie test of mechanical ability contains certain items which will be useful in a battery.

The high validity obtained with the Minnesota Paper Form Board test is extremely interesting. This test has primarily been used by counselors and employment officers as an indicator of mechanical aptitude. However, the results of the present investigation, together with recent findings that scores on the test show fairly good correla-

tions with measures of job success among power sewing machine operators, and can and merchandise packers, indicate that its range of usefulness is

not confined to mechanical jobs. By EDWIN E. GHISELLI. *The Journal of Applied Psychology*, August, 1942, p. 468:9.

Supplementary Instruction for Upgrading

TRAINING in the essential skills of a job is best done on the job, but the supplementary information which paves the way to a more demanding job is most often acquired off the job. Supplementary instruction is applicable at all levels of the organization, and is a prerequisite for advancement from one stage to another. Time is wasted and skills remain untapped unless management encourages employees to help themselves through off-the-job instruction and integrates such instruction with progression on the job.

While some employers provide both facilities and time for related instruction concerned with employees' present jobs, the increasing necessity for maximum production means that this auxiliary instruction will be done more and more after hours. And instruction which applies to more advanced jobs will tend to be left even more to the ambition and initiative of employees.

However, management can and should stimulate employees to seek supplementary instruction outside the plant by:

1. Establishing and announcing the requirements for advancement to specific jobs.
2. Publicizing the use management

makes of information concerning out-of-hours instruction.

3. Providing information about local opportunities for supplementary instruction.
4. Giving financial assistance for, or other recognition of, outside study.

Furthermore, management can perform a useful function in coordinating such instruction by:

1. Guidance of outside study to tie in supplementary instruction with training received on the job.
2. Inclusion of information about employees' off-the-job instruction in the plant personnel records, to be given due weight when candidates for better jobs are considered.

An invaluable aid in securing the cooperation of employees in upgrading is the use of specifications outlining essential requirements for jobs. Job specifications, listing the most important operations each skilled worker does, should therefore be widely circulated among all employees.

Job specifications are also necessary for schools that offer supplementary instruction to workers. Properly prepared specifications furnish an accu-

rate picture of specific skills required and may be used to outline a school program to develop the skills and information in workers by progressive steps.

During the last war the Army compiled such specifications for the various jobs in military units. Schools made use of them, and extraordinary results were obtained. Skilled workers were trained in much less time and more effectively than had even been considered possible—in many instances the instruction period was cut in half. While industry now recognizes its own need for job specifications, it does not always make them available to employees or to schools.

The company training director should be responsible not only for collecting information about sources of supplementary instruction, but he should indicate to employees the relation of such instruction to factory jobs. In helping employees plan their own off-the-job instruction intelligently, management must evaluate carefully the instruction offered by outside agencies—public school evening courses, defense courses, government-sponsored adult education programs, programs of such groups as the Y.M.C.A., college extension programs, etc. The district offices of Training Within Industry are equipped to furnish information on amount, caliber, and cost of supplementary instruction.

Off-the-job instruction is a very important factor in the employee's per-

sonnel record. Indeed, the fact that a young operator, since his employment, has successfully studied blueprint reading and drafting is as significant as the fact that before he was employed he was graduated from a high school. His off-the-job instruction has added to his ability and it also provides an indication of personal characteristics. It is immediately useful to management in upgrading the employee, and it is a powerful factor in morale-building because the employee knows that management realizes he is trying to improve himself.

The plant training man cannot acquire this information completely by any casual method. A regular process or channel through which this information becomes part of the plant personnel records must be established. However, it must be made clear that the acquisition of related instruction is no guarantee of selection for the next vacancy; too many other factors are involved.

Finally, when a public agency supplies instruction that facilitates production, part of the load on plant management has been relieved. A number of companies consider it a good investment to pay all or part of the fees which employees must pay for supplementary instruction when such instruction follows an approved plan and is successfully completed.

From *Bulletin No. 6-A, Training Within Industry Branch, War Manpower Commission.* 4 pp.

PLANT SLOGAN

Your Absence Makes the War Grow Longer

Production Management

How Britain Stimulates Production

HERE are fundamental differences between British and American production techniques which should be understood before weighing the effectiveness of some stimulants which have proved beneficial to British production. When these differences are comprehended, it will be apparent why some schemes to boost British production might not work on the United States' assembly lines, and vice versa.

Britain is essentially a "bits and pieces" production nation. Her machines are relatively simple, man-purpose tools like turret lathes. We in America follow a straight-line production policy, using huge single plants and highly efficient, accurate special-purpose machine tools and assembly lines.

The British scheme makes for a high degree of flexibility and decentralization and quick production. The change of a model seldom is much of a problem in Britain. In America, a change in a tank or plane model may halt an entire assembly line.

Because of its "bits and pieces" policy, Britain started right off producing the implements of war. In America, first emphasis was on new plants—plants big enough to house all the complex new machines. While Britain was spending only about \$700,000,000 for new plants, America was spending some billions. Britain's policy permitted her

factories to produce the world's finest fighter aircraft by the process of building into the planes refinements dictated by experience in the battle fought in British skies. (It has been said that one airplane alone has had 24,000 engineering changes since it first went into production three years ago.) The huge American expenditure, of course, will ultimately pay superlative dividends in unmatched output.

British production since Dunkirk has been phenomenal. At this writing it is regarded as having reached the peak possible under the present arrangement and disposition of facilities and manpower.

Here are some of the steps that have stimulated production in Britain to its present high level:

1. The realization that the world's greatest military force was but 20 miles away, with the homeland virtually defenseless, perhaps stimulated war effort in Britain to a degree that knows no comparison.

2. The blitz, almost as much as Dunkirk, steeled the British will to resist and stimulated the production of war weapons. At the height of the blitz, production did not drop more than 15 per cent; and that decline was due not so much to direct hits on factories as to the workers' loss of sleep, disruption of transportation, and resultant tardiness.

3. Formation of Manufacturers'

Clubs, in which manufacturers engaged in the same type of production get together and exchange ideas, is credited with being a great production boost.

4. The shortage of small cutting tools, taps and dies of odd shapes and sizes was solved in part by establishing in the larger industrial centers "Cutting Tool Mutual Aid Groups," which met at regular intervals and compared requirements against available supply. In many instances collective demands were met from existing stocks of other companies.

5. Government provided a stimulant through Ministry of Production regional organizations, each charged with the duty of maintaining a close check on productive capacities of the plants within an area. It advised the armed services of unused capacity and thus achieved effective scheduling and avoided piling up backlogs of orders.

6. Most factories maintain canteens which supply meals to employees at a nominal charge. The foods served are usually better than those available at home or at restaurants. The Minister of Labor reported in April, 1942, that 3,540 factories employing more than 250 persons each had canteens, and 803 more canteens were being set up. Completion of that program means that 96 per cent of the larger British factories will have canteens.

7. Ventilating systems were installed in most large factories to overcome ventilation problems attendant on blackouts, and factories organized special watcher details which provided a greater sense of security to workers

during raids. Production usually continues during raids unless bombers appear directly overhead, when the workers usually seek shelter.

8. Many factories have loudspeaker systems over which news is broadcast and music is played.

9. Employees are taken from time to time to nearby Army camps to see how the weapons they make are used in the field. Groups of soldiers are sometimes brought into a plant to observe the manufacture of the implements they are using.

10. Some plants distribute morale buttons and post placards and banners in the shop. A favorite slogan is "IADOM"—"It All Depends on Me." Generally, management feels slogans are unnecessary; the workers understand the necessity for maximum production.

Here are some random notes on impressions of British production: the low temperatures at which factories are kept, about 60 degrees. . . . Most men and women employees smoke while working at their machines. . . . The blast walls cluttering up the modern factories—to protect workers from bomb blasts . . . The diverse types of machine tools arranged side by side—some American-made, others English, some Swiss, German, Swedish . . . Scotland Yard and local police check up on employees . . . The Minister of Labor is primarily responsible for this protective service . . . At least half the personnel of most factories are women. *By H. KENNEDY McCook. NAM News, February 6, 1943, p. 7:1.*

Planning the Plant Kitchen

EVERY firm engaged in war production has had either to rearrange or enlarge its floor space to handle the increased volume of goods produced. While there are some firms that take pride in never changing, most of these are well on their way to the industrial morgue. Congestion eventually produces chaos.

The kitchen, like other departments, must keep pace with increased production. When there is crowding and muddle in the kitchen, cleanliness vanishes, crockery piles up, and waste mounts.

In laying out a new kitchen, the floor space set aside must bear a direct relation to the number of dinners served, and a fairly accurate figure can be arrived at by allowing approximately three square feet per diner. Space must then be allocated for the various departments: (1) stores for vegetables and provisions; (2) cold stores; (3) vegetable preparation room; (4) main kitchen—steaming pans and steaming ovens, roasting ovens, boiling table, frying and grilling equipment, etc.; (5) servery; (6) wash-up.

The size of the stores will be determined by the availability of supplies, the distance from the nearest town, and the transportation facilities. Store-rooms should be situated on the northern side of the building for coolness in summer, with a receiving entrance adjacent.

Vegetable preparation rooms should be near the vegetable store. The pro-

cess of cleaning, peeling and trimming vegetables is both wet and dirty; in consequence, a well-drained floor with a gulley and trapped drain is needed. Concrete floors are permissible, provided wooden duck-boards are furnished for the comfort of the workers, but a floor of red quarry tiles and glazed white tile walls to a height of six feet are ideal, since they permit the room to be hosed down.

On the disposition of the cooking plant, advice might well be sought from a consultant or from the firm supplying the equipment. The aim should be to insure a steady flow of materials through the kitchen to the servery without cross traffic. Vegetable steaming pans should be within easy reach of the vegetable preparation rooms, and there should be an unobstructed route from them to the servery. Ease of movement in and out of all sections is of prime importance; narrow gangways and doorways full of struggling females with poised plates are a menace.

Last but not least is the kitchen wash-up. This should have ample accommodation for spacious sinks, large draining boards, and plentiful provision of racks for draining. Accumulations of crockery inevitably mean a high rate of breakage.

A great deal might be said concerning the building materials to be used in kitchen construction, but it is possible to touch on the subject only sketchily. First and foremost, the

kitchen requires a good sound floor. Wood should not be used if it can be avoided, since it wears unevenly—making a surface tiring to the feet—and holds dust and dirt. Cement floors, untreated, are also unsuitable, since they make it difficult to keep the kitchen clean, but a number of preparations to overcome this defect are available, and a treated cement floor is the cheapest available. The red quarry tiles recommended for the vegetable preparation room also form a fine, hard-wearing floor but are somewhat expensive. In any case, the floor should be laid to a definite fall, with a gulley provided leading to a drain.

The walls must be light. While white glazed tiles to a height of six feet are

preferable, gloss paint is permissible and cheaper. If the ceiling and floor are coved at the walls and the window sills are beveled, cleaning is facilitated and lodgment of dirt reduced.

Adequate light is essential both to cleanliness and good cooking, and bodily comfort is greatly dependent on good ventilation. Cross ventilation is desirable, but fans can be provided if it is not feasible. Almost equally important is the provision of hoods over ranges, boiling tables, etc., to carry away steam and cooking smells. These devices trap a considerable amount of vaporized fat and in consequence preserve the decorations. BY E. FRIEND GILSON. *The Factory Manager*, December, 1942, p. 31:3.

Ten Commandments of War Production*

1. Be on the job every workday on time.
2. Play safe by working *safely*—reduce the number of industrial accidents.
3. Work carefully—reduce the amount of rejects, waste and work spoilage.
4. Keep physically fit through proper diet, rest and recreation.
5. Contribute ideas for improving production to the company suggestion box program.
6. Understand your job and do it as well as you can.
7. Keep the shop clean, orderly, well-lighted and well-ventilated.
8. Be courteous and friendly on the job, and pull together as a team.
9. Remember our fighting men, who are daily meeting the fire of the enemy.
10. Remember that our cause is right and just.

* Firms in war industry may post this decalogue on plant bulletin boards or reproduce it in their employee magazines. Adapted from *Safety Zone Bulletin*, March, 1943.

AMA PACKAGING CONFERENCE AND EXPOSITION

A Wartime Packaging Conference and Exposition will be held by the American Management Association on April 13 to 16, inclusive, at the Hotel Astor, New York City.

Some Effects of War on Manufacturing

After hearing everywhere the thunder of the massive march of a nation toward war, it is worthwhile to sit down with the "plain people" of industry and listen to each one talk about the changes which war brings to his plant.

Dun & Bradstreet reporters asked several thousand manufacturers what percentage of their sales were for war, what lines they had added or dropped or expected to add or drop, and whether they had acquired or disposed of physical facilities. Similar questions were asked additional hundreds of manufacturers by mail.

The composite shows that five out of every eight manufacturers were doing some war work at the end of June, 1942, whereas only half of them were so engaged at the end of 1941; and that one in every 10 was engaged exclusively in war production, compared with only one in every 100 six months earlier.

Of the manufacturers who had some war work at the end of 1941, the largest proportion reported between 1 and 25 per cent of their sales for that purpose. At the end of June, 1942, the largest proportion had 75 to 100 per cent of their sales in war business. The conversion to war work among the smaller concerns has been impressive, reflecting no doubt the results of the campaign to promote subcontracting.

This increase in war business handled by manufacturers has not all been at the expense of civilian production—although this is the general impression. A good deal of it has been taken care of by increases in facilities. About one in every four manufacturing concerns acquired additional facilities in the six months ended June 30, 1942, while the proportion was highest in such war industries as iron and steel, machinery, electrical machinery, and non-ferrous metals, the number of producers of civilian goods who had added to their facilities is also impressive.

In the first half of 1942, 13 of the 16 industries covered by this survey added more lines or products than they dropped; however, in the second half of 1942, only one industry (automotive products) expected to add more lines or products than it would have to drop.

—WILLIAM HAYES and ROWENA WYANT in *Dun's Review* 12/42

Management Engineers in Wartime Role

THE waiting room of the business doctor is filled these days with thousands of new patients. The management engineer—his profession dates back about 50 years—is working harder than ever before, in assisting American industry to meet its wartime problems.

The profession really got its big start during and after the last war. Management engineers were at first concerned primarily with production problems, but after World War I sales problems assumed new importance because capacity to produce was larger than demand.

Today there are approximately 600 management engineering firms, concentrated largely in the heavily industrialized sections of the country. Most of the big firms are located in New York, Boston, Cleveland, Chicago and Philadelphia. A recent survey indicates that they are devoting, on the average, 90 per cent of their staff capacity to war contractors or branches of the government. Some are 100 per cent in this work.

They range in size up to firms with 200 engineers. Fees vary widely. Probably the largest ever charged was for a survey made in 1935-37 for U. S. Steel Corporation, which totaled \$1,545,688. This job took more than two years and was so big that the work was "subcontracted" to several management engineering firms. Ordinarily, fees are based on the time spent on the job by the engineers. One firm, for instance, charges \$60 a day for each engineer on the job. A leading management engineering firm that has assigned 18 engineers full time to a company with a monthly volume of over \$20,000,000 charges this client a fee of approximately \$20,000 a month, or one-tenth of 1 per cent of sales.

—*The Wall Street Journal* 2/9/43

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Marketing Management

The Negro Market

BACK in the Turbulent Thirties, nearly 70 per cent of the Negro families in the nation's three biggest cities—New York, Chicago and Philadelphia—were on relief or were working for WPA. In prosperous 1937, the economic status of the New York Negro was still bad; accounting for 6 per cent of the city's population, he represented 22 per cent of its relief load.

But since then things have changed. The war and its manpower shortage have brought a windfall of opportunity, and with it the Negro's greatest prosperity. Negro employment and Negro spending are definitely *up*, and the Negro market of today is vastly different from that of former years.

Some advertising men have placed the annual buying power of the Negro at between \$7,000,000,000 and \$10,000,000,000, but a better estimate—by Negro marketing men themselves—gives a figure between \$2,000,000,000 and \$6,000,000,000. The annual purchasing power of the 900,000 Negroes in the South's 17 largest cities has been estimated at \$308,000,000, or more than the total U. S. exports to Mexico and Central America in the peak year of 1929.

Just what is the Negro doing with his new money? The consensus of Negro sales executives and bankers is that, first and foremost, he is making

small purchases of the products he's always *wanted*; then (2) he is buying the war bonds which provide him with some future security; (3) he is buying the things he has *needed*; (4) he is cleaning up his back debts; (5) he is eying insurance (every Negro tries to insure a decent burial); (6) he is looking for investment (in a home for himself or some real estate property); and (7) he lets his money draw 2 per cent interest in the bank. At the war's end he will have a greater reserve (in war bonds) than ever before in his history and will constitute a major market for housing and huge amounts of durable goods.

Several years ago, before the new prosperity, the chief of the Department of Commerce Division of Negro Affairs estimated that urban Negro purchases might be broken down in these proportions: 27.2 per cent for food; 14.9 per cent, clothing; 12.4 per cent, rent; 4.7 per cent, fuel and light; 1.4 per cent, household furnishings; 7.5 per cent, savings (notably life insurance); and 31.9 per cent, miscellaneous, including education, recreation, consumer durables. In 1939 Negro women spent over \$25,000,000 for beauty service, according to *The Negro Handbook*.

The Negro, particularly in urban centers, is brand-conscious to the extreme; and, by reason of a Negro press

that doesn't mince words about discrimination, he is loyal to the products of manufacturers he considers "friendly." Above all, most urban Negroes prefer quality and will frequently strap themselves with time payments in order to own a well-regarded product. Not necessarily an inherent trait, this devotion to quality may have arisen from years of working in moneyed homes; or it may be that, having been cheated plenty, the Negro is convinced he can depend only on quality products. At least one chain with outlets in Negro sections has repossessed "name" products from white debtors, palmed them off on Negro buyers at cut rates.

In Chicago, New York and other Northern cities, the Negro can shop for his merchandise in about any store he pleases, but in Baltimore, Washington and points South, he's up against it if he chooses to indulge his preferences for the "name" products sold only in white stores. In many cases the clerk won't wait on him, and the producer loses the sale that advertising created.

What brands do Negroes buy? One Negro newspaper representative organized a research department, went to cities throughout the East with questions, proved conclusively that advertising was doing its job and that national brands led. In New Jersey, for instance, 27.2 per cent preferred Sheffield canned milk; 23.3 per cent, White House; 16.9 per cent, Borden's. In Pittsburgh, Camel cigarettes were preferred by 22.7 per cent; Luckies, by 15.7 per cent; Chesterfields, by 6.7 per

cent; Philip Morris, by 5.7 per cent—while the scores of the 10-cent brands were negligible. In Baltimore a recent survey showed that El Productos were preferred, 3 to 1.

In advertising to Negroes, there are certain points to be borne in mind:

1. They want to be referred to as "Negroes," although "Colored People" is permissible; and they are lukewarm about the phrase, "the Race." No other terms are acceptable.

2. They don't like movie or ad portrayals that show them stupid, slow or always happy-go-lucky; they'd like to have their people represented more on the order of Rex Ingram as the solemn butler-philosopher in the movie, "Talk of the Town."

3. They like the champions and the successful business and professional personalities of their race pictured in ads; they don't think much of the fat, good-natured mammy as the personification of their people.

4. They like trade characters on packages. In the deep South, where most of the Negro illiterates live, much of the buying is done by identifying the trade characters.

5. They claim that some manufacturers whose products are popular with Negroes lose ground in the contests they run in national media. Example: Offering a prize of a deluxe trip to Florida, something a Negro never expects to win, makes him feel the advertising is directed to white folks exclusively.

BY PARKER JAMES. *Advertising & Selling*, February, 1943, p. 111:4.

Financial Management

The Valuation of Inventories

THE typical business enterprise computes its annual net profit and pays its annual income tax on a first-in, first-out inventory valuation. Under this method, the cost of any article in the inventory is assumed to be the latest cost of the corresponding quantity purchased or produced, with the assumption that the oldest material or finished goods will be used or sold before any of the later purchases or productions. During a period of rising prices, unrealizable appreciation is included in income in the value of the inventories, and during a period of falling prices, operating profits are reduced or wiped out by unrealized inventory losses.

There are five other widely known and occasionally used methods of valuing inventory which tackle this problem in different ways and in different degrees: namely, "base stock" method of valuation, average cost, retail method, standard cost, and—of the widest current importance—last-in, first-out.

The "base stock" or "normal stock" method of control is predicated on the theory that the only real costs are replacement costs, and that a fixed, or a relatively fixed, inventory, must be maintained permanently. The essential supply, or base stock, is valued at a fixed price, usually so low that actual market prices will never fall below it. Then this part of the inventory is treated as though it were never sold,

despite the fact that it is mixed with incoming inventory and physically, more or less, does get processed and used. Inventory, which is purchased during a given year (or any other accounting period) in excess of this base stock is generally valued on the "cost or market, whichever is lower" basis by the first-in, first-out method, or by averaging.

While at times the physical volume of inventory actually on hand may fall below the base stock quantity, this fact does not interfere with the base price. When replacements are made and the physical stock again is brought to its predetermined normal size, any excess cost is immediately written off against earnings. If the market value breaks through the price at which the base inventory is carried, then the value of the base inventory is continued at the lower level permanently or until another break-through.

The average cost method of pricing inventories is peculiarly suitable to the tobacco industry, since it irons out fluctuations in the prices of the various kinds of tobacco to a material extent. The average cost is a "moving average" and is figured from additions to and subtractions from stocks on hand each month over, roughly, a three-year period. Market quotations for raw tobacco are entirely ignored. At times, inventory valuations on the balance

sheet bear little relation to the immediate market prices.

To use average cost, a concern must have a complete cost system with perpetual inventory records kept in both dollars and quantities. The weighted average for an item is computed by adding the purchases to the beginning inventory and dividing the total dollar amount by the total quantity. This weighted average cost is used in pricing, spreads the effect of price fluctuations, and is more satisfactory from a managerial viewpoint where average costs are of greater importance than costs of a particular lot.

In the retail method of inventory valuation all purchases are entered in the merchandise record at cost and at a predetermined selling price. The difference between the cost of all items in the inventory and the total predetermined selling price of all items represents the anticipated gross profit. This percentage of mark-on, with necessary adjustments for discounts, sales and allowances, is applied to the ending inventory at the aggregate selling price, yielding the inventory at computed "cost," which may be "cost or market, whichever is lower," depending on price revisions on purchases and price changes made on merchandise in stock. By this method, cost is a direct derivative of the price at which merchandise is currently being offered for sale.

By use of the retail inventory method of valuation, the laborious process of inventorying and costing thousands of items to obtain an inventory figure

for balance sheet purposes is eliminated. Balance sheets may be prepared monthly or as often as desired by using the book inventories obtained from the merchandise record or stock ledger. Like all book inventories, however, the retail book inventory must be checked periodically by physical inventories.

"Standard cost" has been defined as predetermined cost computed on the specifications of the product and predetermined manufacturing methods which include specific amounts of raw material, direct labor, and burden—cost as it should be rather than actual cost. Standard burden rates are established by budgeting the manufacturing expenses considered appropriate to a normal level of operating capacity. Then the difference between standard costs and actual costs is usually reflected in over-absorbed and under-absorbed accounts which are used in making actual adjustment at the time of the physical inventory.

The last-in, first-out method of inventory valuation, on the other hand, assumes that real costs of goods sold are those of replacement, as nearly as possible at the time of sale. Therefore, sales are costed on the basis of inventory latest acquired or "last-in," while "first-in" inventory is treated as unsold or, in effect, as a tool for future operations, and is thus reported on the balance sheet. Since this method of interpreting cost does not necessarily require any fixed amount of stock, "first-in" inventory at the end of any given year will be affected by the volume of purchases and sales.

As in the case of base stock, successful operation of "last-in, first-out" presupposes that "first-in" stocks will be carried at a conservative price level. It is not essential, however, that low market quotations prevail at the time of the change to "last-in, first-out." For the average manufacturing or processing concern, the "last-in, first-out" method of inventory valuation comes nearer than any other accounting formula yet devised to revealing the true condition of the business.

Over a sufficiently long period of time—a complete economic cycle—aggregate net operating results should be exactly the same, whether last-in, first-out, or first-in, first-out, or any other approved method of valuing in-

ventory is employed. The net profits before taxes of respective years within the cycle may vary considerably, depending upon which method is employed, and under present tax laws, net profits after taxes over a complete cycle will also vary considerably. Last-in, first-out tends to level off the annual net income by lowering the peaks and raising the valleys.

This system was first recognized by statutory provision of the Revenue Act of 1939. The fact that many important corporations had adopted it before it was permitted for tax purposes indicates that in some cases benefits other than income tax savings were anticipated. By ROY A. FOULKE. *Dun's Review*, December, 1942, p. 5:7.

Case Studies in Renegotiation

MANUFACTURERS may get a surprise—either pleasant or unpleasant—if they take as rule-of-thumb the joint Army-Navy statement that percentage profits on war business will be from a half to a third the net on comparable peacetime work. While this represents a general target for renegotiation, both services emphasize that they are sticking to their policy of fitting the adjustment to the individual case.

Boiled down to one word, the basic principle of contract renegotiation is flexibility. Price adjustment boards have complete discretionary power within the wide limits set by Congress. Their object in each case is to review

all the factors that have a bearing on the manufacturers' profit position.

Boards consider not only the contractor's costs and percentage markup, but also the difficulty of his job, the ingenuity he has shown, the risk he is taking. This means that two manufacturers with similar income statements and balance sheets may come out of renegotiation with entirely different results.

Renegotiation officials insist that any cut-and-dried formula would stifle incentive and ruin many of the contractors who clamor for it. They point out that a company with no conversion problems and an efficient plant might do well with an 8 per cent profit on sales. Another company making the

same product but faced with the necessity for converting facilities and working with obsolete machinery might need 15 per cent to break even. No flat rule, they say, could provide fair results in both cases.

As an illustration of how its policy works out on the average, the Navy has compiled figures for 21 companies now finished with renegotiation. Renegotiable business before adjustment totaled \$1,615,156,009. Costs came to \$1,304,605,552, which left a profit before taxes of \$310,550,456. This represented 19.2 per cent on sales, 23.8 per cent on costs.

Renegotiation scaled down total sales value to \$1,445,170,716, leaving profit before taxes of \$140,565,163. This was 9.7 per cent of sales, 10.7 per cent of costs. In 1939, the same 21 companies cleared \$41,361,174 before taxes, representing 10.8 per cent on sales and 12.1 per cent on costs.

On total business (including both renegotiable and civilian contracts) the 21 companies cleared \$211,686,165 before taxes, which represents 11.9 per cent on sales and 13.6 per cent on costs. After taxes, they came out with a net of \$49,381,878, which compares with a 1939 net of \$33,677,755.

To date the Navy has closed some 60 cases, involving total contracts of \$12,125,000,000. Recoveries add up to \$732,186,000. What these aggregates fail to show is the variation between in-

dividual cases. This is clearly indicated in the following examples:

Case I is a motor manufacturer, now making substantially the same products he turned out in peacetime. He has put his own money into \$1,560,000 worth of emergency facilities, but is using \$5,225,000 in working capital provided by the government. Although his total business has nearly doubled, the renegotiable part of it amounts to only \$14,150,000. Adjustment in his case brought the profit on renegotiable business down to 12.9 per cent of sales.

Case II is a radio manufacturer who is doing all his own financing. Here the adjustment took 70 per cent of his profit on renegotiable business but still left him with 15.3 per cent on sales.

In Case III, an aircraft company was making a smaller percentage profit than it did in peacetime, but the enormous jump in volume had blown up profits by almost 2,000 per cent. Renegotiation trimmed profit to a scant 8.1 per cent on sales, but even after taxes the company is making about three times its average peacetime income.

Case IV shows what happens when a small metalworking company is caught in the rush of war business. From an average income after taxes of \$25,000 in 1937-40, it shot up to \$360,000. Renegotiation trimmed it back to \$160,000.

Business Week, February 20, 1943,
p. 19:2.

► MORE THAN 10,000,000 placements were made by the United States Employment Service in 1942, according to War Manpower Chairman McNutt.

—Domestic Commerce 2/11/43

Insurance

Compensation Laws and the Handicapped Worker

DESPITE more widespread absorption of the handicapped by industry in recent months, a considerable number of employable handicapped individuals have not yet found useful work. Factors which normally would tend to increase employment opportunities for the handicapped have been offset in many instances by the operation, in most states, of workmen's compensation laws, and the inadequacy of many laws providing for the payment of compensation for second injuries, which, of course, operate against the re-employment of workers disabled by industrial accidents. Moreover, while many employers might be willing to try some handicapped individuals if they could be hired on an apprenticeship basis, such a trial period is frequently outlawed by the refusal of a union to permit employment without remuneration.

To help dubious employers hire handicapped workers without assuming "excessive risk," various groups have attempted to amend and strengthen workmen's compensation laws. Many states, for example, have set up second-injury funds to cover the risk of further injury resulting in total disability. Such provisions usually take the form of that found in the Illinois Workmen's Compensation Act. This provision limits the employer's respon-

sibility for injuries resulting from a second accident and provides in certain instances that compensation will be paid out of a state fund. As in almost every state, the number of claims reported in Illinois under this provision is negligible. Records of the Wisconsin Industrial Commission also show that, for 20 years ending in 1939, only 56 individuals have been awarded money from the state's second-injury fund.

In some states, too, pressure has been exerted to nullify the excuses for discrimination against the physically handicapped by having such workers surrender or "waive" their rights under workmen's compensation laws. The National Conference on Labor Legislation, like many another group, opposes the use of waivers.

Still another approach to the problem has been the use of persuasion by workmen's compensation officers and other agencies, which have urged employers to relax their restrictions and modify their requirements for certain types of work. Some labor unions have opposed the use of pre-employment medical examinations, contending that they have often been designed to screen out many individuals with good productive capacity and thus "skim the cream" of the labor market. By VERNON E. BRINK. *Commerce*, November, 1942, p. 25:5.

Ride-Sharing Coverages

THE development of two specialized automobile liability coverages designed to assist in the promotion of ride-sharing plans for the transportation of employees to and from their work has been announced by the National Bureau of Casualty & Surety Underwriters and the American Mutual Alliance.

One of the forms is a restricted coverage for a previously uninsured car owner, providing protection against the passenger hazard created by using his car under such a plan. The other form provides protection for an employer against possible liability arising out of his participation in the establishment or operation of such a ride-sharing plan among his employees.

The coverages are not available in Massachusetts and Texas and will not be available in Virginia until further notice. In New Hampshire, restricted coverage for owned automobiles may not be written, but the restricted coverage for employers has been approved.

The form covering the automobile owner is limited to bodily injury liability insurance against claims by persons injured while being carried in the automobile on their way to or from work while the automobile is being used under a ride-sharing arrangement. It does not cover claims by other persons on their way to and from work. Thus it does not cover

claims by pedestrians, occupants of other vehicles, or even other occupants of the car who are not on their way to or from work. The cost of this coverage is one-half the cost of standard coverage, subject to a minimum per policy of \$5 for the standard limits of protection.

The form covering the employer provides bodily injury liability insurance against claims by any persons injured by automobiles which the employer does not own but which are being used to take employees to and from their work under a ride-sharing plan in which he has some participation. If desired, such coverage may be extended to include property damage liability coverage on the same basis. The cost of title insurance will be 2 per cent of the regular Class I employers' non-ownership rate for each automobile used under a ride-sharing arrangement. This special form of coverage does not give the employer any protection for the ordinary use of non-owned automobiles in the course of his regular business, such as the use of automobiles by traveling representatives, inspectors, collectors, etc. Coverage for such operations should be purchased in the usual manner under existing employers' non-ownership forms, which also cover the hazards contemplated by the new restricted form without additional charge. *The Journal of Commerce*, March 29, 1943, p. 9:1.

The Management Question Box

Questions and Answers on Management Practice Based on the Inquiries Received by the AMA Research and Information Bureau.

Individual replies are made promptly either by mail or telephone to inquiries received by the Research and Information Bureau. This service is available to executives of concerns holding company memberships. The questions cited here are those which it is believed are of general interest to the membership.

Trends in Vacation Policies

Question: Has the trend toward paid vacations for wage earners been modified as a result of the war? Is the policy of granting bonuses in lieu of vacations becoming widespread?

Answer: The trend toward vacations with pay, which has noticeably accelerated during the past several years, has been given further impetus by the war. The Bureau of Labor Statistics, in a recent memorandum,* reports that approximately 8,000,000 wage earners—the equivalent of 60 per cent of the total number under collective agreement—are now entitled to vacation allowances. It is estimated that in 1940 only about one-fourth of all wage earners then under union contract—or 2,000,000 workers—were entitled to paid vacations if certain eligibility requirements were fulfilled. The above figures are exclusive of the vacation benefits provided wage earners not operating under collective agreement. It should also be noted that in such industries as rubber, petroleum, steel, aluminum, meat packing, etc., the granting of vacations with pay has been common for some time, in many instances long before the negotiation of union contracts.

Gains in paid vacations during the past years have been most impressive in the coal mining, railroad transportation, and shipbuilding industries. The 1941 anthracite and bituminous coal agreements provided vacations and vacation bonuses where none had previously existed. In the latter part of the same year, an arbitration award extended vacations to non-operating railroad employees. The Pacific Coast master shipbuilding agreement, with its provision for paid vacations, has served as the pattern in that industry.

A marked rise in the proportion of agreements providing paid vacations has taken place in the newspaper printing and publishing, electrical equip-

* *Vacations and Holidays Provided Under Union Agreements, January, 1943*, Memorandum No. 6, Bureau of Labor Statistics, U. S. Department of Labor.

ment, trucking, flat glass, hosiery and leather-tanning industries. The least increase has occurred in the case of workers who are employed in seasonal industries or in a number of different establishments during the year. Even in these groups, however, some effort is being made to establish vacation plans on a cooperative basis.

While the payment of bonuses in lieu of vacations is being resorted to in a number of vital war industries, this practice is not common throughout industry. Government officials have on several occasions stated that vacations are necessary for safeguarding health and promoting efficiency and should therefore be granted insofar as possible. As a rule, unions also do not encourage the waiving of vacations in favor of bonus payments. During the past two years, however, the tremendous pressure for production in certain quarters has caused some relaxation in this direction. Thus, a number of agreements in the basic iron and steel, automobile and aircraft industries now grant bonuses in lieu of vacations or specify that such action is permissible. Similar allowances are made in a number of agreements in the electrical equipment, copper, aluminum, rubber and steel products industries. A large proportion of machine tool workers under collective agreement are subject to vacation waiver clauses. Under the terms of the 1942 Shipbuilding Stabilization Agreement employees are permitted to forego vacations if employers consider their services necessary. There is general agreement that the bonus payments for waiver of vacation should equal the amount of vacation pay to which the worker is entitled.

Incidentally, the Chairman of the War Manpower Commission recently endorsed a vacation plan for war workers with good attendance records whereby such workers would be given "incentive leaves." He further suggested that the time thus granted be used to help out on farms, indicating his belief that a change of work is often as beneficial as a rest.

Current Practices in Price Certification

Question: To what extent are manufacturing companies requiring their suppliers or being required by their customers to furnish evidence of compliance with the price regulations of the Office of Price Administration?

Answer: A survey by the National Office Management Association, based on information supplied by some 20 selected manufacturing companies, gives an indication of current practices, with respect to price certification. To the question, "Do you require your suppliers to furnish such guarantees?", seven companies replied in the affirmative and nine in the negative. Two said they sometimes require certification, and four others stated this was the case only

when prices have been increased or when there is some reason to question the supplier's conformity to the law. Several firms which require certification simplify the procedure by including a note on their purchase order forms to the effect that acceptance of an order is taken as evidence of full compliance with the requirements of the OPA. The question, "To what extent have your customers required such certifications from your company?", elicited the following replies: Three firms indicated no such requests have been received; 12 get such requests only rarely; three receive them often, and one very often.

It should be noted in this connection that in August, 1942, Leon Henderson, then Price Administrator, made the following answer to a manufacturer who stated that some customers asked that a sworn statement of conformity with OPA regulations be carried on every invoice: "It will be satisfactory to this Office if an appropriate statement is imprinted on invoices and, in addition, a separate statement is supplied to the buyer by the seller, sworn to by a responsible company official, to the effect that the prices set forth on all invoices being issued or to be issued will not exceed applicable maximum prices established by the Office of Price Administration."

Sixty New Miniature Markets

OF the census publications for the Sixteenth Census (1940), none is more potentially valuable for market analyses and surveys than the Census Tract Bulletins. There will be 60 of these when the series is complete, and well over two-thirds are now available.

This series is the result of an attempt to find units which would be smaller than "wards" and which would remain relatively fixed from one census period to another. In the introduction to the bulletins, the new statistical units are described as ". . . small areas having a population usually between 3,000 and 6,000 into which certain large cities (and sometimes their adjacent areas) have been subdivided for statistical and local administrative purposes."

"The tract areas," the introduction continues, "are established with a view to approximate uniformity in population, with some consideration of uniformity in size, and with due regard for natural barriers. Each tract is designed to include an area fairly homogeneous in population characteristics."

The nature of the ground covered may be outlined somewhat categorically: (1) population in three major race groups ("white, Negro, and other"), in 22 age groups, and by sex; (2) years of school completed, employment status, class of worker, major occupation group, country of birth; (3) dwelling units by occupancy status and race of occupants; (4) value of owner-occupied property, monthly rents of rented property; (5) type of structure, state of repair, plumbing, equipment, size of household, persons per room, radios, refrigeration and heating.

Under the official designation, "Population and Housing Statistics for Census Tracts," the bulletins are for sale through the Superintendent of Documents, Washington, D. C. Most of them cost only 10 cents a copy, although the price of some of those dealing with larger cities is slightly higher—for example, Newark, N. J., 15 cents; Cleveland, Ohio, 35 cents.

—PAUL T. CHERINGTON in *Advertising & Selling* 2/43

Survey of Books for Executives

Industrial Research. By F. Russell Bichowsky. Chemical Publishing Co., Brooklyn, N. Y., 1942. 126 pages. \$2.50.

Reviewed by Gerald Wendt

It is not easy to catch a competent director of industrial research in a talkative mood and to draw him into an informal discussion of the tricks of his trade. But Dr. Bichowsky is unique among the highbrows: he chatters easily, with a minimum of rhetoric and a modicum of earthly slang. This little book of his could well be a series of nine across-the-lunch-table chats with any business executive—and worth the price of taking him to lunch. He chatters amiably, freely, and withal wisely, from wide personal experience, on the nature of research, the factors involved in invention, relations with management, engineering and the patent department, on the special problems of research in a small company, and on the organization, equipment, and technical control of the research department. Executives who are either oversold or undersold on research can profit hugely from his distilled comments.

Perhaps the greatest value of the book derives from the fact that his opinions are so commonplace, so com-

mon-sensible. Few research directors would quarrel with them or rate them as new. But there are now over 2,400 industrial research laboratories in the United States, spending more than \$400,000,000 per year. A consensus of their principles and practices is a primary asset of United States industry and worth having in black and white.

What makes the book so welcome is management's need of just such a matter-of-fact appraisal that cuts out both the magic and the bugaboo from the fetish of research. For example, there is still much confusion as to the relative functions of the research man and of the development engineer. They are miles apart, says Bichowsky, but complementary to each other. ("The research man must be able to find the grain of gold in the pan of gravel; the development engineer must be able to see the fly in the ointment.") Research must create new values without the hampering thought of cost, profit or company opportunism; development engineering must budget the new values in terms of equipment, investment, operating cost and company policy. ("Development and engineering are the antitheses of research. They are the brakes and control mechanism for the car of progress—without it no busi-

ness could be safely driven—too much and it never starts.”)

Least satisfactory is the final chapter, dealing with the actual operation of a research department, the financial accounting system, the salary and award system, the rights of the inventor, the patent policy (including licensing and pools). Here the problems are listed, but authoritative answers are few. But this is also the point where no consensus exists and where a real study is needed.

Dr. Bichowsky started his career 25 years ago as a physical chemist at the Carnegie Institution of Washington, the University of California, Johns Hopkins University. Then, 16 years ago, he organized the Divisions of Chemistry and of Thermodynamics at the U. S. Naval Research Laboratory. During the past 10 years he has directed various industrial laboratories in refrigeration, air drying and air conditioning, and has been a consultant for the Dow Chemical Co. He admits that a research department—hence a research director—may be a pearl or an irritant. He should know from personal experience which is which—and why.

Insuring Your Business. By Fred C. Crowell, Jr. Barron's Publishing Co., Boston, 1942. 102 pages. \$1.50.

American insurance buyers annually pay out nearly \$5,000,000,000 for insurance protection. No comparable expenditure is made for anything else in the world about which those who buy it know so little.

For those who have not specialized in the purchase of insurance, *Insuring Your Business* provides a clear understanding of the types of coverage they should have and indicates how they can be purchased with greatest economy. The book tells the buyer what insurance is and how it operates; how the insurance industry is organized and how it functions. It shows how to select an agent, presents a practical buying formula, and describes methods for reducing insurance costs. It outlines the major insurance protection forms in the property and casualty fields and tells how to determine whether they are applicable to particular risks. And it describes the dramatic story of what the insurance industry is doing behind the scenes in behalf of the consumer.

Briefer Book Notes

OUR CRITICAL WEALTH IN INVENTORIES. By Roy A. Foulke. Dun & Bradstreet, Inc., New York, 1942. 71 pages. Gratis. An examination of the techniques used by the War Production Board and the Office of Price Administration to control our national inventories of critical materials, and of the effects of their regulations upon business enterprise. Wartime problems of inventory valuation are discussed in a special section of this brochure, which also lists important balance sheet and operating ratios for 78 lines of business.

INDUSTRIAL FIRE BRIGADES TRAINING MANUAL. Edited by E. T. Cox, W. F. Heisler and Horatio Bond. National Fire Protection Association, Boston, 1943. 176 pages. \$1.50. This training manual is designed primarily for use by plants where employees are assigned to fire-fighting duties in a company fire brigade. Material is included on periodic inspections, and some general information provided on fire hazards and causes.

EMPLOYEE TRANSPORTATION. Department of Logistics, International Business Machines Corporation, New York, 1942. 8 pages. Gratis. Outlines an effective procedure for conducting plant transportation surveys and for correlating personnel who travel from a common living area to a common working area into "share-the-ride" groups.

A FINANCIAL MANUAL FOR THE MAN ENTERING THE SERVICE. The Insurance Research and Review Service, Inc., Indianapolis, 1942. 32 pages. (Single copies, 25 cents; quantity prices on request.) A résumé of facts which the man entering the Services should know about the status of his real estate, insurance, household goods, automobile, and other property holdings; with a description of government benefits to which he and his family are entitled.

PUBLICATIONS RECEIVED

Control of Absence. Policyholders Service Bureau, Metropolitan Life Insurance Company, New York. 13 pages. Gratis.

Price Control in the War Economy. By Julius Hirsch. Harper & Brothers, New York, 1943. 311 pages. \$3.00.

Textbook of Office Management. By W. H. Leffingwell and E. M. Robinson. McGraw-Hill Book Company, Inc., New York, 1943. Revised second edition. 469 pages. \$3.00.

One Nation for Sale. By Bert Johnston. The Johnson & Hardin Co., Cincinnati, Ohio, 1943. 192 pages. \$2.00.

Public Library Service to Business: A Comparative Study of Its Development in Cities of 70,000 and More. By Marian C. Manley. The Public Library, Newark, N. J., 1942. 217 pages. \$3.50.

Washroom and Locker-Room Facilities: A Discussion of Plant Requirements. Policyholders Service Bureau, Metropolitan Life Insurance Company, New York. 28 pages. Gratis.

Let's Write Good Letters. By Sherman Perry. The American Rolling Mill Co., Middletown, Ohio, 1942. 176 pages. \$1.00.

Business Letters and Business Talk. By Herbert N. Casson. *The Efficiency Magazine*, Kent House, 87, Regent Street, London, W. I., 1939. 160 pages. 5s.

Duties and Qualifications of a Reception Clerk. Policyholders Service Bureau, Metropolitan Life Insurance Company, New York, 1942. 16 pages. Gratis.

The Law of Fidelity Bonds. By Frank H. Deady. The Rough Notes Co., Indianapolis, Ind., 1941. 240 pages. \$5.00.

Ideologies and American Labor. By Paul K. Crosser. Oxford University Press, New York, 1941. 221 pages. \$2.50.

Surplus and Dividends. By Henry Rand Hatfield. *Dickinson Lectures in Accounting*. Harvard University Press, Cambridge, Mass., 1943. 48 pages. \$1.00.

